Docket No.: 049677-0165 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of	:	Customer Number: 20277
Kazunori TANAKA, et al.	:	Confirmation Number: 2851
Application No.: 10/523,994	:	Tech Center Art Unit: 2874
Filed: February 09, 2005	:	Examiner: Hoang Q. Tran

For: BUFFERED OPTICAL FIBER, AND BUFFERED OPTICAL FIBER TERMINATED WITH CONNECTOR

APPEAL BRIEF

Mail Stop Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Appeal Brief is submitted in support of the Notice of Appeal filed July 26, 2007, wherein Appellant appeals from the Primary Examiner's rejection of claims 1 and 4-15.

Real Party In Interest

This application is assigned to Sumitomo Electric Industries, Ltd. by assignment recorded on February 9, 2005, at Reel 016943, Frame 0978.

Related Appeals and Interferences

Appellant is unaware of any related Appeal or Interference.

Status of Claims

Claims 1 and 4-15 have been twice rejected. It is from the rejection of claims 1 and 4-15 that this Appeal is taken.

Status of Amendments

An Amendment under 37 C.F.R. § 1.116 was filed on May 24, 2007. The Examiner denied entry of the after-final amendment in the Advisory Action dated June 28, 2007. However, claims 1 and 4-15, as presented in the November 7, 2006 Amendment under 37 C.F.R. § 1.111, were previously entered and are now on Appeal.

Summary of Claimed Subject Matter

As discussed at page 2, line 25 of the Disclosure of Invention section of the specification, the present subject matter relates to a buffered optical fiber which is environmentally friendly, has a flame retarding property and has excellent optical transmission characteristics. See also page 8, lines 15-21 and page 10, lines 4-7 of the present specification.

According to one aspect of the present subject matter, as described in independent claim 1 and depicted in FIG. 1, a buffered optical fiber 10 is provided and includes a second coating layer 16 on an outer peripheral surface of an optical fiber 13 produced by providing a first coating layer 13 on an outer peripheral surface of a glass fiber 11. See page 8, lines 8-13 of the specification. The second coating layer includes a second resin composition including a base polymer, and 100 to 250 weight parts of metal hydroxide and 10 to 100 weight parts of a nitrogen-based flame retardant material per 100 weight parts of the base polymer. See

specification at page 11, line 16 through page 13, line 14. The second resin composition does not contain halogenated materials. See specification at page 8, lines 14-17. As described in the specification at page 8, lines 15-21, since the second resin composition is free of compounds having a halogen group, no toxic gas is generated when the buffered optical fiber is subjected to burning. The second resin composition includes, as the base polymer, one of components selected from the group consisting of a polystyrene-based polymer, a polystyrene-based elastomer, a mixture of polystyrene-based polymer and polyphenylene ether polymer, and a mixture of polystyrene-based elastomer and polyphenylene ether polymer. See page 9, lines 11-16 of the present specification.

Independent claim 13 describes a buffered optical fiber 19 terminated with a connector 18 obtained by connecting a buffered optical fiber 50. See FIG. 6 of the present specification and page 34, lines 15-20. The buffered optical fiber 50, as with the buffered optical fiber 10 shown in FIG. 1, includes a second coating layer 16 on an outer peripheral surface of an optical fiber 13 produced by providing a first coating layer 13 on an outer peripheral surface of a glass fiber 11. See page 8, lines 8-13 of the specification. The second coating layer includes a second resin composition including a base polymer, and 100 to 250 weight parts of metal hydroxide and 10 to 100 weight parts of a nitrogen-based flame retardant material per 100 weight parts of the base polymer. See specification at page 11, line 16 through page 13, line 14. The second resin composition does not contain halogenated materials. See specification at page 8, lines 14-17. The terminated buffered optical fiber is configured by exposing a part having a predetermined length from an end of the glass fiber 11 thereby to have a glass fiber exposure portion 51A and a coating end surface 56A and a connector 18 incorporating a ferrule 17 that has a hollow space 17A enabled to accommodate the glass fiber exposure portion 51A, wherein the coating end

surface 56A abuts against an abutting end surface 17B of the ferrule 17 so as to accommodate the glass fiber exposure portion 51A in a state, in which no distortion force is applied thereto, in the hollow space 17A. See FIG. 6 and specification at page 34, line 15 through page 35, line 9.

Another aspect of the present invention is defined by independent claim 15, which is identical to independent claim 1, but for the base polymer which is limited to either a polystyrene-based elastomer or a mixture of polystyrene-based elastomer and polyphenylene ether polymer. See page 9, lines 11-16 of the present specification.

Grounds of Rejection To Be Reviewed By Appeal

The Grounds Of Rejection To Be Reviewed On Appeal And Which Require Resolution By The Honorable Board Of Patent Appeals And Interferences Are:

Claims 1, 6-8, 14 and 15 were rejected under 35 U.S.C. § 103(a) as being obvious over Newmoyer (U.S. Pat. No. 5,814,406, hereinafter "Newmoyer") in view of Ono et al. (U.S. Pat. App. Pub. No. 2003/0158309, hereinafter "Ono");

Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Newmoyer in view of Ono;

Claims 5 and 9-12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Newmoyer; and

Claim 13 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Newmoyer in view of Caveney (U.S. Pat. App. Pub. No. 2003/0158309, hereinafter "Caveney").

Argument

Issue 1 – Whether claims 1, 6-8, 14 and 15 are unpatentable under 35 U.S.C. § 103(a) predicated upon Newmoyer in view of Ono.

The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention under any statutory provision always rests upon the Examiner. *In re Mayne*, 41 USPQ2d 1451 (Fed. Cir. 1997); *In re Duel*, 34 USPQ2d 1210 (Fed. Cir. 1995); *In re Bell*, 26 USPQ2d 1529 (Fed. Cir. 1993). That burden has not been discharged.

Appellant respectfully submits that Newmoyer is directed to an electrical wire for transmitting electrical signals by the conductor (Figure 1) and, therefore, completely unrelated to the present claimed subject matter, namely buffered optical fibers. Both independent claims 1 and 15 are directed to a buffered optical fiber for transmitting optical signal by the glass. In contrast, the electrical wiring 16 (copper wiring) of Newmoyer is used for transmitting electrical signals by the conductor. See Newmoyer at col. 5, lines 45-52. Thus, the rejection is invalid for at least the fact that copper electrical wiring of Newmoyer is not remotely related to the claimed glass fiber of present claims 1 and 15.

Fig. 1 of the present specification discloses that the glass fiber 11 is present in the center and claims 1 and 15 each requires coating layers around the glass fiber. The present claimed buffered optical fiber and the electrical wire of the Newmoyer reference are not only different from one another in terms of material, but also in the signal to be transmitted. As discussed below, the property which is required for the coating layer is different between the present claimed subject matter and the electric wire of Newmoyer.

Appellant submits that when a resin is coated around glass, it is shrunk due to the application of heat and, thus, lateral pressure is applied to the glass and the double refraction index of the glass changes. With this change in reflection index, the loss of light transmitting within the glass increases. The present specification has evaluated this loss and reproduced the results in Table 1 (Optical Transmission Loss Characteristics, Temperature Change Resistance Property) of the present specification. See pages 5-6 of the Preliminary Amendment filed on February 9, 2005.

Optical fibers are required to have good transmission loss and temperature change characteristics. That is, the lateral pressure applied to the glass by the coating resin should be adjusted, and in view of this aspect, a resin suitable for optical fibers should be selected. Indeed, as described on page 26, lines 9-16 of the present specification, when conventional buffered optical fiber undergoes abrupt changes in temperature, uneven stress is applied to the glass fiber. Thus, the glass fiber is easily distorted. The amount of transmission loss variation at the heat cycle test is large. Consequently, in the case of the conventional buffered optical fiber, the transmission loss due to the change in temperature increases.

The Honorable Board's attention is invited to page 28, line 2 through page 29, line 8 of the present specification, wherein a resin used for coating of an electric wire cannot be used for the coating resin of the optical fiber without modification. This section of the specification is reproduced below for the Honorable Board's convenience:

> Incidentally, the device according to prior art 2 is a cable (or electric wire) adapted so that the flame retardant material (no nitrogen-based flame retardant material is intended) is added to at least the outer surface and the overall sheath of the insulator covering the conductor. Patent document 2 describes a material for the insulator according to prior art 2, which comprises polyphenylene oxide, low-density polyethylene and SEBS as resin components. Even in the case of such an electric cable, an end surface of the conductor may protrude from the end surface of the insulator (this phenomenon is sometimes referred to as "protrusion"). However, even when the "protrusion" occurs, for example, in

the case that such a cable is connected to another communication member at its end surface, a conduction failure is not actualized. However, when the "protrusion" occurs in the case that the buffered optical fiber is connected to another communication member at its end surface, unintended stress is applied to the glass fiber, so that the optical transmission characteristics are degraded, and that the glass fiber is broken in the worst case.

Therefore, even when the insulator according to prior art 2 is applied to the buffered optical fiber according to prior art 1, the insulator according to prior art 2 differs from the insulator of the buffered optical fiber according to the embodiment of the invention, in that the former insulator comprises no nitrogen-based flame retardant material. Thus, the buffered optical fiber according to the embodiment of the invention is not obtained from the prior art. Additionally, it is not ordinarily considered by those skilled in the art that the insulator according to prior art 2, which causes the problem of the "protrusion" of the optical fiber, is applied to the buffered optical fiber according to the embodiment of the invention.

Contrary to the Examiner's assertion in the February 26, 2007 final Office action, the buffer layer of Newmoyer is not suitable as flame retardant coating for optical fibers. As discussed above, Appellant has provided factual evidence in their own specification to support Appellant's position that a resin used for coating of an electric wire cannot be used for the coating resin of the optical fiber without modification. The Examiner's comment at page 7 of the final Office action regarding the absence of the term "protrusions" in claim 1 is irrelevant. Appellant has identified the problem of protrusions when a resin used for coating of an electric wire is used as the coating resin of optical fiber. Thus, one of ordinary skill in the art would not have been motivated to use a resin designed for electrical wires on optical fibers due to protrusion problems.

At page 7 of the final Office action, the Examiner referred to Newmoyer at col. 3, lines 19-22, with reference to U.S. Pat. No. 4,678,294. The Examiner asserted that Newmoyer discloses a "similar buffer layer as admitted prior art (4,678,295) wherein the buffer layer is applied to a fiber cable." Appellant submit that Newmoyer's mere reference to a fiber optic plenum cable in U.S. Pat. No. 4,678,294 fails to support the Examiner's apparent conclusion that somehow it would

be obvious to substitute the twisted pairs of copper wiring Newmoyer with fiber optic cable disclosed in U.S. Pat. No. 4,678,294.

Furthermore, even if Newmoyer and Ono are combined as suggested by the Examiner, and Applicants do not agree that a requisite fact-based motivation has been established, the claimed buffered optical fiber would not result. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988). Ono is silent as to using its resin compositions for coating optical fibers. The hard resin of Ono is used for exterior and interior parts for OA (office automated) equipment and home electric appliances such as personal computers, notebook personal computers, laser beam printers, ink jet printers, etc. See Ono at page 1, numbered paragraph [0002]. However, a buffered optical fiber of the present claimed subject matter is not rigid. A buffered optical fiber is wired by being gently bent. The polycarbonate resin of Ono is not suitable for the buffered optical fiber of the present subject matter, nor does the reference suggest using its polycarbonate resin as a resin composition for coating buffered optical fibers. Thus, it should be readily apparent that the Examiner's combination fails to result in a buffered optical fiber as recited in claims 1 and 15. The rejection is not legally viable for at least this reason.

As described in the specification, the present claimed subject matter is directed to, in part, a buffered optical fiber which does not pollute its environmental system, has flame retardancy and excellent optical transmission. See pages 2-3 of Appellant's specification. In contrast, Newmoyer describes an electrical wiring used in a plenum (compartment or chamber to which air ducts are connected and which forms part of an air distribution system). See cols. 1-2 of Newmoyer. Newmoyer is not reasonably pertinent to optical transmission or the problems associated therewith.

It is well settled that the problem addressed and solved by a claimed invention should be given consideration in resolving the ultimate legal conclusion of obviousness under 35 U.S.C. § 103. *North American Vaccine, Inc. v. American Cyanamid Co.*, 7 F.3d 1571, 28 USPQ2d 1333 (Fed. Cir. 1993); *Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 15 USPQ2d 1321 (Fed. Cir. 1990); *In re Nomiya*, 509 F.2d 566, 184 USPQ 607 (CCPA 1975). Newmoyer fails to express any recognition of the problem much less offer any viable solution thereof. Under such circumstances, the problem addressed and solved by the claimed invention constitutes a potent indicium of nonobviousness which should have been given consideration regarding the ultimate legal conclusion of nonobviousness under 35 U.S.C. § 103.

The separate patentability of dependent claims 6, 7 and 8 is advocated.

Dependent claim 6

Dependent claim 6 describes, in pertinent part, that the buffered optical fiber is constituted so that an amount of transmission loss variation (dB/km) is equal to or less than 0.2 dB/km.

At the bottom of page 3 of the final office action, the Examiner asserted that the limitations of transmission loss, residual thermal distortion and linear expansion coefficient are "all functional properties" of the buffered optical fiber of claim 1.

Appellant respectfully submits that the claimed transmission loss variation (dB/km) property of the buffered optical fiber is neither taught nor suggested by Newmoyer. As discussed above, the present claimed buffered optical fiber and the electrical wire of the Newmoyer reference are not only different from one another in terms of material, but also in the signal to be transmitted.

Therefore, since the reference is silent as to the claimed property of the buffered optical fiber, the rejection as it applies to dependent claim 6 is not legally viable.

Dependent claim 7

Dependent claim 7 describes, in pertinent part, that the linear expansion coefficient of the second resin composition is equal to or less than 4.0×10^{-4} (1/K).

At the bottom of page 3 of the final office action, the Examiner asserted that the limitations of transmission loss, residual thermal distortion and linear expansion coefficient are "all functional properties" of the buffered optical fiber of claim 1.

Appellant respectfully submits that the claimed linear expansion coefficient of the second resin composition is neither taught nor suggested by Newmoyer. As discussed above, the present claimed buffered optical fiber and the electrical wire of the Newmoyer reference are not only different from one another in terms of material, but also in the signal to be transmitted. Therefore, since the reference is silent as to the claimed property of the second resin composition, the rejection as it applies to dependent claim 7 is not legally viable.

Dependent claim 8

Dependent claim 8 describes, in pertinent part, that residual thermal distortion at cabling is equal to or less than 150 μm.

At the bottom of page 3 of the final office action, the Examiner asserted that the limitations of transmission loss, residual thermal distortion and linear expansion coefficient are "all functional properties" of the buffered optical fiber of claim 1.

Appellant respectfully submits that the claimed residual thermal distortion property of the buffered optical fiber is neither taught nor suggested by Newmoyer. As discussed above, the present claimed buffered optical fiber and the electrical wire of the Newmoyer reference are not only different from one another in terms of material, but also in the signal to be transmitted. Therefore, since the reference is silent as to the claimed property of the buffered optical fiber, the rejection as it applies to dependent claim 8 is not legally viable.

Appellant, therefore, submits that the imposed rejection of claims 1, 6-8, 14 and 15 under 35 U.S.C. § 103 for obviousness predicated upon Newmoyer in view of Ono is not factually or legally viable and, hence, solicits reversal thereof.

Issue 2 - Whether dependent claim 4 is unpatentable under 35 U.S.C. § 103 for obviousness predicated upon Newmoyer in view of Ono

Claim 4 depends from independent claim 1. Appellant incorporates herein the arguments previously advanced in traversing the imposed rejection of claims 1, 6-8, 14 and 15 under 35 U.S.C. § 103 for obviousness predicated upon Newmoyer in view of Ono. If any independent claim is non-obvious under 35 U.S.C. § 103(a), then any claim depending therefrom is non-obvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Accordingly, the rejection of claim 4 is not legally viable in view of claim 4's dependency from independent claim 1.

Moreover, contrary to the Examiner's assertion, dependent claim 4 is not a product-by-process claim. Rather, claim 4 describes that a part of the polystyrene-based polymer or the polystyrene-based elastomer is acid modified. The Examiner has failed to identify where

Newmoyer or Ono discloses or suggests that a part of the polystyrene-based polymer or the polystyrene-based elastomer is acid modified.

Appellant, therefore, submits that the imposed rejection of claim 4 under 35 U.S.C. § 103 for obviousness predicated upon Newmoyer in view of Ono is not factually or legally viable and, hence, solicits reversal thereof.

Issue 3 – Whether claims 5 and 9-12 are unpatentable under 35 U.S.C. § 103(a) predicated upon Newmoyer

Claims 5 and 9-12 depend from independent claim 1. Appellant incorporates herein the arguments previously advanced in traversing the imposed rejection of claims 1, 6-8 and 14 under 35 U.S.C. § 103 for obviousness predicated upon Newmoyer in view of Ono. If any independent claim is non-obvious under 35 U.S.C. § 103(a), then any claim depending therefrom is non-obvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Accordingly, the rejection of claims 5 and 9-12 is not legally viable in view of the dependencies of claims 5 and 9-12 from independent claim 1.

Appellant, therefore, submits that the imposed rejection of claim 5 and 9-12 under 35 U.S.C. § 103 for obviousness predicated upon Newmoyer in view of Ono is not factually or legally viable and, hence, solicits reversal thereof.

Issue 4 – Whether claim 13 is unpatentable under 35 U.S.C. § 103(a) predicated upon Newmoyer in view of Caveney

Independent claim 13 describes, in pertinent part, a buffered optical fiber having a second coating layer on an outer peripheral surface of an optical fiber produced by providing a first coating layer on an outer peripheral surface of a glass fiber. Contrary to the Examiner's assertion, Newmoyer does not disclose or remotely suggest a buffered optical fiber.

As discussed above, Newmoyer is directed to an electrical wire for transmitting electrical signals by the conductor (Figure 1) and, therefore, completely unrelated to the present claimed subject matter, namely buffered optical fibers. Independent claim 13 is directed to a buffered optical fiber for transmitting optical signal by the glass. In contrast, the electrical wiring (copper wiring) of Newmoyer is used for transmitting electrical signals by the conductor. See Newmoyer at col. 5, lines 45-52. Thus, the rejection is invalid for at least the fact that copper electrical wiring of Newmoyer is not remotely related to the claimed glass fiber of present claim 13.

Fig. 1 of the present specification discloses that the glass fiber 11 is present in the center and claim 13 requires coating layers around the glass fiber. The present claimed buffered optical fiber and the electrical wire of the Newmoyer reference are not only different from one another in terms of material, but also in the signal to be transmitted. The property which is required for the coating layer is different for the present claimed subject matter and the electric wire of Newmoyer.

The secondary reference to Caveney was relied upon by the Examiner for disclosing a connector for terminating an optical fiber. The Examiner failed to explain, however, why one of ordinary skill in the art would have been motivated to add a connector designed for optical fiber to the metal electrical wiring of Newmoyer, much less how this modification would be achieved.

The Examiner's announced motivation for combining the unrelated structures amounts to nothing more than a generalization that ignores the significant structural differences between the applied references.

As the Examiner has not established that the prior art teaches, with a reasonable expectation of success, that a particular benefit would result from the Examiner's proposed combination, Applicants respectfully submit that one having ordinary skill in the art would not have been motivated to modify Newmoyer with Caveney.

Appellant, therefore, submits that the imposed rejection of claim 13 under 35 U.S.C. § 103 for obviousness predicated upon Newmoyer in view of Caveney is not factually or legally viable and, hence, solicits reversal thereof.

Conclusion

Based upon the arguments submitted *supra*, Appellant submits that the Examiner's rejections under 35 U.S.C. § 103 are factually and legally erroneous. Appellants, therefore, solicit the Honorable Board to reverse Examiner's rejections under 35 U.S.C. § 103.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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CLAIMS APPENDIX

1. A buffered optical fiber having a second coating layer on an outer peripheral surface of an optical fiber produced by providing a first coating layer on an outer peripheral surface of a glass fiber,

wherein a second resin composition constituting the second coating layer comprises a base polymer, and 100 to 250 weight parts of metal hydroxide and 10 to 100 weight parts of a nitrogen-based flame retardant material per 100 weight parts of the base polymer,

wherein the second resin composition does not contain halogenated materials and

wherein the second resin composition comprises, as the base polymer, one of components selected from the group consisting of a polystyrene-based polymer, a polystyrene-based elastomer, a mixture of polystyrene-based polymer and polyphenylene ether polymer, and a mixture of polystyrene-based elastomer and polyphenylene ether polymer.

4. The buffered optical fiber according to claim 1, wherein a part of the polystyrene-based polymer or the polystyrene-based elastomer is subjected to acid modification.

5. The buffered optical fiber according to claim 1, wherein the second coating layer is formed of two or more coating sublayers.

6. The buffered optical fiber according to claim 1, wherein the buffered optical fiber is constituted so that an amount of transmission loss variation (dB/km) is equal to or less than 0.2 dB/km, said

amount of transmission loss variation comprising: a difference in quantity between a maximum loss variation and a minimum loss variation in a transmission loss amount (in dB/km at a wavelength of 1.55 μm and including a transmission loss amount generated just after the test is started) generated during a heat cycle exposure test performed by repeating a heat cycle consisting of 0.5 hours, in which temperature is held at (-40) °C, and 0.5 hours, in which temperature is held at 85 °C.

7. The buffered optical fiber according to claim 1, wherein the linear expansion coefficient of the second resin composition is equal to or less than 4.0×10^{-4} (1/K).

8. The buffered optical fiber according to claim 1, wherein residual thermal distortion at cabling is equal to or less than 150 μm, said

residual thermal distortion at cabling comprising: a distance between an end surface of said glass fiber and an end surface of said second coating layer in said buffered optical fiber which is heat-treated at 120 °C for 168 hours.

9. The buffered optical fiber according to claim 5, wherein said buffered optical fiber has said first coating layer of an ultraviolet curable resin layer and said buffered optical fiber is configured so that when a cut is made in the direction from said second coating layer to said glass fiber so as not to allow an apex of the cut to reach said glass fiber and the ultraviolet curable resin layer and said second coating layer are separated from said glass fiber by drawing them out of the glass fiber, a ratio of a length of said ultraviolet curable resin layer in a separated and removed coat piece to a length of said separated second coating layer is 15 % to 85 %.

10. The buffered optical fiber according to claim 9, wherein an inner layer and an outer layer are serially provided as the sublayers of said second coating layer on an outer peripheral surface of said optical fiber in a direction in which said layers are away from said optical fiber, said inner layer being derived by adding 100 to 250 weight parts of metal hydroxide and less than 100 weight parts of a nitrogen-based flame retardant material per 100 weight parts of polystyrene-based thermoplastic polymer, polyolefin-based thermoplastic polymer, or polyphenylene ether polymer, or a mixed polymer of these materials.

11. The buffered optical fiber according to claim 9, wherein an inner layer and an outer layer are serially provided as said second coating layer on an outer peripheral surface of said optical fiber in a direction in which said layers are away from the optical fiber, wherein said outer layer being derived by adding 100 to 250 weight parts of metal hydroxide and less than 100 weight parts of a nitrogen-based flame retardant material per 100 weight parts of polystyrene-based thermoplastic polymer, polyolefin-based thermoplastic polymer, or polyphenylene ether polymer, or a mixed polymer of these materials.

12. The buffered optical fiber according to claim 9, which is constituted so that a drawing-out force on drawing out said ultraviolet curable resin layer and said second coating layer from said glass fiber is equal to or less than 2.5 kgf.

13. A buffered optical fiber terminated with a connector obtained by connecting a buffered optical fiber, wherein the buffered optical fiber has a second coating layer on an outer peripheral

surface of an optical fiber produced by providing a first coating layer on an outer peripheral surface of a glass fiber,

wherein a second resin composition constituting the second coating layer comprises a base polymer, and 100 to 250 weight parts of metal hydroxide and 10 to 100 weight parts of a nitrogen-based flame retardant material per 100 weight parts of the base polymer,

and wherein the second resin composition does not contain halogenated materials,

which terminated buffered optical fiber is configured by exposing a part having a predetermined length from an end of said glass fiber thereby to have a glass fiber exposure portion and a coating end surface and a connector incorporating a ferrule that has a hollow space enabled to accommodate the glass fiber exposure portion, wherein the coating end surface abuts against an abutting end surface of said ferrule so as to accommodate said glass fiber exposure portion in a state, in which no distortion force is applied thereto, in the hollow space.

14. The buffered optical fiber according to claim 1, wherein the second resin composition does not contain phosphorous.

15. A buffered optical fiber having a second coating layer on an outer peripheral surface of an optical fiber produced by providing a first coating layer on an outer peripheral surface of a glass fiber,

wherein a second resin composition constituting the second coating layer comprises a base polymer, and 100 to 250 weight parts of metal hydroxide and 10 to 100 weight parts of a nitrogen-based flame retardant material per 100 weight parts of the base polymer,

wherein the second resin composition does not contain halogenated materials and

wherein the second resin composition comprises, as the base polymer, one of components selected from a polystyrene-based elastomer or a mixture of polystyrene-based elastomer and polyphenylene ether polymer.

EVIDENCE APPENDIX

No extrinsic evidence is relied on in this Appeal Brief.

RELATED PROCEEDINGS APPENDIX

Appellant is unaware of any related proceedings.